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THE SECRETARY OF DEFENSE
WASHINGTON

December 3, 1958

Dear Mr. President:

A summary of progress on the ICBM and IRBM programs during October is attached.

During October 1958, flight tests were attempted on a POLARIS and a JUPITER missile. The POLARIS flight was aborted on the launcher due to a malfunction of the booster ignition circuit. The JUPITER missile was successfully launched but went out of control and the flight was terminated by the range safety officer.

Successful performance of the THOR boosters used as the first stage of the second and third LUNAR PROBES, which were launched in October and November respectively, provided increased confidence in the turbopump redesign and retrofit program currently underway.

During November, two THOR and two ATLAS flight tests were conducted. These missiles were successfully launched. The first THOR flight was terminated by the range safety officer due to a malfunction in the control system. The second THOR flight was partially successful in that impact occurred approximately 30 miles beyond the target. The first ATLAS flight was prematurely shortened by a malfunction of the engine cutoff controls. The second ATLAS flight accomplished a significant milestone in that the full ICBM 5500 nautical mile range was achieved. While accuracy demonstration was not a primary objective, impact occurred approximately 24 miles beyond the computed impact area.

Construction of the first THOR operational squadron facilities in the United Kingdom is proceeding satisfactorily.

With great respect, I am,

Faithfully yours,

Neil McElroy

Attachment

The President

The White House

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SUMMARY

ATLAS (ICBM) PROGRAM

The launch of ATLAS 9B was rescheduled from 31 October to 11 November. The flight was postponed for repair of minor damage from a small fire which occurred in the engine compartment during the flight readiness firing.

ATLAS 7B underwent a full duration captive test run on 17 October on test stand 1-1 at the Missile Static Test Site, Edwards Air Force Base. The extreme heat generated by the long-duration firing warped the test stand. The stand has been repaired and firings can be resumed by 25 November.

The first test of the ATLAS 368,000-pound-thrust 3-engine cluster booster engine for operational configuration missiles was conducted on schedule during October.

The ATLAS turbopump modification program is progressing on a 7-day per week, 24-hour per day basis. Although slight delays in deliveries of the modified turbopumps have occurred, the loss of time is expected to be recovered.

The sixth ATLAS operational squadron, which will be sited at Forbes Air Force Base, Kansas, will be designated the 548th Strategic Missile Squadron and will become operational in September 1961.

At Vandenberg Air Force Base, installation of ground support equipment is underway in ATLAS launch complex 65-1. Completion of complex 65-1 is scheduled for January 1959, and completion of launch complex 65-2 is scheduled for completion in May 1959.

Construction of the third and fourth ATLAS launch complexes at Warren Air Force Base is on schedule.

TITAN (ICBM) PROGRAM

TITAN A-2, the first TITAN flight test missile, was destroyed by explosion of the first-stage helium tank during a flight readiness firing in Denver on 20 October. Minor damage to the test stand and missile erector was repaired. TITAN A-3, which had been completed on an accelerated schedule, was accepted by the Air Force on 23 October, and will replace TITAN A-2. No significant delay will occur in the TITAN launch schedule.

TITAN A-1, the captive test missile, completed its fourth successful firing on 8 October. All systems performed satisfactorily throughout the 130-second firing; all test objectives were attained.

A decision was made in September to retrofit turbopumps to provide TITAN first-stage engines of higher reliability. Some production delays have resulted, but a satisfactory delivery schedule has been agreed upon.

Delivery of three TITAN first-stage and three second-stage engines is expected in November.

Excavation for the missile silo and the propellant terminal for the TITAN operational system training facility at Vandenberg Air Force Base is complete. The facility will be complete in December 1959. Design for the operational training facility at Vandenberg Air Force Base will be complete in December and construction will start in February 1959.

Design of launch complexes for the first operational squadron at Lowry Air Force Base will be complete in January 1959. Facility design for the second TITAN operational squadron in the Denver area will be complete in March 1959. Siting investigation for facilities for the third operational squadron at Ellsworth Air Force Base, South Dakota, is ninety per cent complete, with facility completion estimated for July 1959.

THOR (IRBM #1) PROGRAM

THOR 130, the first stage of the second LUNAR PROBE, was launched at the Atlantic Missile Range on 11 October. The missile functioned extremely well and the flight is considered a major achievement.

The program for retrofitting turbopump assemblies in all THOR missiles through THOR 148 is proceeding on schedule. The modified flight test vehicles are expected to be launched on the present schedule.

THOR's 138, 129, 145, and 140 are scheduled for launch during November. THOR 129 is the first stage of the third LUNAR PROBE; the others are operationally configured missiles.

All THOR guidance system and associated ground support equipment production was halted on 2 October by a strike at the AC Spark Plug Division of the General Motors Corporation. Production has been resumed at maximum rate. The electrical workers and machinists are still on strike in Milwaukee, but no program delay is expected. Impact of the strike is being determined, but airborne system and integrated ground support equipment schedules for October were met and no delay to production lines at Douglas is expected.

THOR missile production is on schedule. Eight missiles have been delivered to the United Kingdom and two are in transit. Ground support equipment is essentially on schedule and operational dates will be met.

THOR 160, booster for a space flight, has been modified to current flight configuration.

Approximately sixty-one C-124 loads of ground support equipment were airlifted to the United Kingdom during October for Project EMILY.

Construction of the first THOR operational squadron facilities in the United Kingdom will be complete in December. Construction of the second THOR operational squadron facilities is underway and should be completed in May 1959.

Design for THOR operational squadron facilities in Alaska is proceeding on schedule and is 90 per cent complete.

JUPITER (IRBM #2) PROGRAM

Lack of authorization to deploy remains the most critical problem in the JUPITER program. Access to site must be made available by 15 November in order that even a token deployment may be achieved by 31 December.

The unsuccessful flight test of JUPITER 9 on 9 October has been attributed to excessive heating in the tail compartment. Telemetered records indicate that a sharp rise in temperature occurred at 18 seconds of flight, the missile went out of control at 26.7 seconds and thrust decay started at 27.8 seconds. The missile was destroyed at 47.4 seconds by the Range Safety Officer. The high temperatures and flash fire which destroyed control networks are believed to be the result of a ruptured chamber pressure sensing line. Roll control was achieved satisfactorily by the swivel exhaust nozzle during the controlled portion of the flight.

A highly successful Development Engineering Inspection was held at Redstone Arsenal 7 - 10 October 1958. The demonstration of receipt, inspection, and maintenance equipment, command and missile simulator (bread board) system and particularly the T minus 15-minute countdown and simulated firing were very well received. The 15-minute countdown, which included rapid propellant fill, was the first demonstration of this capability.

Manufacturing difficulties continue to cause slippage in delivery of some items of ground support equipment.

POLARIS (FLEET BALLISTIC MISSILE) PROGRAM

An attempted launching of the second flight test vehicle was unsuccessful because of a failure of a component. The malfunction caused ignition of the first-stage motor at both ends and it burned out on the launcher. The second-stage motor also was ignited and lifted off but was destructed by the Range Safety Officer.

The first captive test of a second-stage motor was successfully conducted at the Santa Cruz Test Facility.

A decision was made to increase the reentry body stabilizing flare by about seven inches and to eliminate the rate damping system.

The first dynamic heat transfer test of a scale-model reentry body was successfully conducted.

The first General Electric guidance system was completed during October.

The twelfth and thirteenth underwater launches of the POP-UP test facility were conducted successfully.